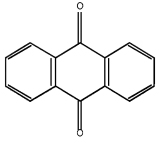
******* QUERY RESULTS *******
(FORMULA 3a/4a)

```
=> d his l14

     (FILE 'REGISTRY' ENTERED AT 08:16:27 ON 11 SEP 2009)
               SAVE TEMP L13 NGU057RECOM2/A

     FILE 'HCAPLUS' ENTERED AT 08:24:13 ON 11 SEP 2009
L14            1 S L10

=> d que l14
L3                STR
```



```
Structure attributes must be viewed using STN Express query preparation:

Uploading L1.str
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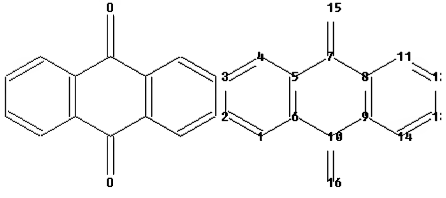
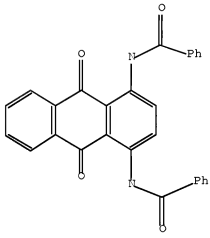


```
chain nodes :
15  16
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14
chain bonds :
7-15  10-16
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  5-7  6-10  7-8  8-9  8-11  9-10  9-14  11-12  12-13
13-14
exact/norm bonds :
7-15  10-16
exact bonds :
5-7  6-10  7-8  9-10
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  8-9  8-11  9-14  11-12  12-13  13-14
isolated ring systems :
```

containing 1 :

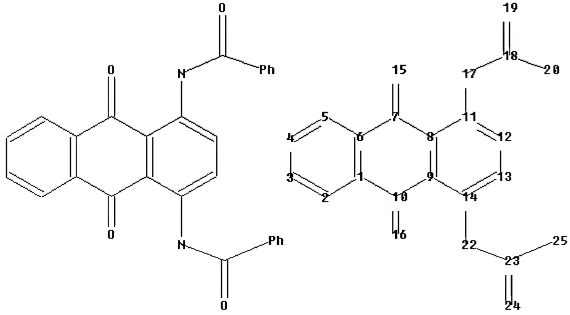
Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS

L5 72890 SEA FILE=REGISTRY SSS FUL L3
L7 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L3.str



chain nodes :
15 16 17 18 19 20 22 23 24 25
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14
chain bonds :
7-15 10-16 11-17 14-22 17-18 18-19 18-20 22-23 23-24 23-25
ring bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 6-7 7-8 8-9 8-11 9-10 9-14 11-12 12-13
13-14
exact/norm bonds :
7-15 10-16 11-17 14-22 17-18 18-19 22-23 23-24
exact bonds :
1-10 6-7 7-8 9-10 18-20 23-25
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-11 9-14 11-12 12-13 13-14
isolated ring systems :
containing 1 :

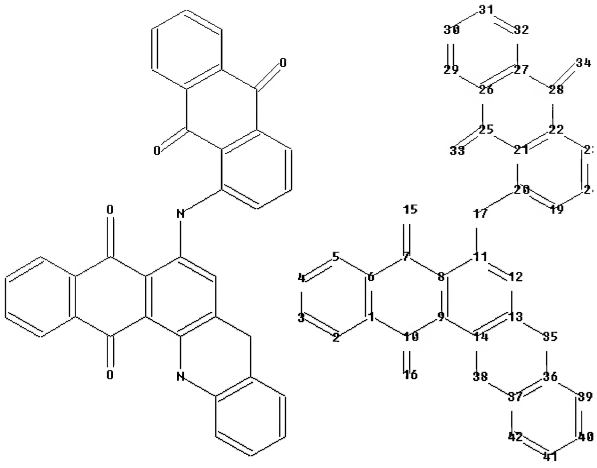
Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS 17:CLASS 18:CLASS
19:CLASS 20:CLASS 22:CLASS
23:CLASS 24:CLASS 25:CLASS

L8 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation:

Uploading L4.str



chain nodes :
15 16 17 33 34
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42
chain bonds :
7-15 10-16 11-17 17-20 25-33 28-34
ring bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 6-7 7-8 8-9 8-11 9-10 9-14 11-12 12-13 13-14 13-35 14-38 19-20 19-24 20-21 21-22 21-25 22-23 22-28 23-24 25-26 26-27 26-29
27-28 27-32 29-30 30-31 31-32 35-36 36-37 36-39 37-38 37-42 39-40 40-41 41-42
exact/norm bonds :
1-10 6-7 7-8 7-15 9-10 10-16 11-17 13-35 14-38 17-20 25-33 28-34 35-36 37-38
exact bonds :
21-25 22-28 25-26 27-28
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-11 9-14 11-12 12-13 13-14 19-20 19-24 20-21 21-22 22-23 23-24 26-27 26-29 27-32 29-30 30-31 31-32 36-37 36-39 37-42 39-40
40-41 41-42
isolated ring systems :
containing 1 : 19 :

```
Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS  17:CLASS  19:Atom  20:Atom
21:CLASS  22:Atom
23:Atom  24:Atom  25:Atom  26:Atom  27:Atom  28:Atom  29:Atom  30:Atom  31:Atom
32:Atom  33:CLASS
34:CLASS  35:Atom  36:Atom  37:Atom  38:Atom  39:Atom  40:Atom  41:Atom  42:Atom



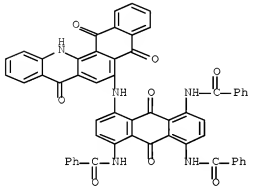
L10           1 SEA FILE=REGISTRY SUB=L5 SSS FUL L7 AND L8
L14           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10


=> d l14 ibib abs hitstr hitind

L14  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:         1967:412525  HCAPLUS  Full-text
DOCUMENT NUMBER:          67:12525
ORIGINAL REFERENCE NO.:   67:2427a,2430a
TITLE:                    Vat dyes
INVENTOR(S):              Hohmann, Walter
PATENT ASSIGNEE(S):       Farbenfabriken Bayer A.-G.
SOURCE:                   Ger., 4 pp.
                          CODEN: GWXXAW
DOCUMENT TYPE:            Patent
LANGUAGE:                 German
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    -------------------     --------
     DE 1232296                 19670112    DE 1964-F42969          19640523
     FR 1434038                             FR
     GB 1087568                             GB
GI   For diagram(s), see printed CA Issue.
AB   Vat dyes are prepared by carbazolizing anthrimides, obtained by treating 1-
     chloro-4,5,8-tribenzamidoanthraquinone (I) with aminoanthraquinones. Thus, a
     mixture of I 20, 1-aminoanthraquinone (II) 9, Na2CO3 3.3, Cu mixture 2, and
     naphthalene 200 parts was boiled for 5 hrs., cooled to 130°, 200 parts PhCl
     added, the precipitate filtered at 80°, washed with PhCl, and the solvent and
     salts removed by steam-distillation to give 4,5,8-tribenzoyl-1,1'-dianthrimide
     (III), green in concentrated H2SO4, gray-blue flocks in H2O.  III (10 parts)
     was added to a mixture of 40 parts AlCl3 and 90 parts pyridine at 110°, heated
     for 1 hr. at 140° with partial distillation of pyridine, the melt taken up in
     dilute NaOH, heated at 80° with addition of NaCl, filtered and dried to give
     10 parts IV, which dyed cotton gray from a red-brown vat.  Similarly, other
     dyes were prepared from I (amine component, vat color, and shade given): 4-
     BzNH derivative of II, brown, black-brown; 5-BzNH derivative of II, -, gray-
     brown; 4,4'-diamino-1,1'-dianthrimide, -, greenish gray; 4-amino-1,1'-
     dianthrimide, khaki, blue-gray; 2-amino-3,4-phthaloylacridone, red-brown
     reddish gray; 5-aminoanthrapyrimidine, brown, black-brown.  I condensed with
     4-amino-1,1'-dianthrimidecarbazole gave the corresponding
     anthrimidemonocarbazole, yellow-brown, in H2SO4, olive green on cotton from a
     red-brown vat.
IT   15956-72-6P
     RL: IMF (Industrial manufacture); PREP (Preparation)
        (preparation of)
RN   15956-72-6  HCAPLUS
```

CN Benzamide, N,N',N''-[8-[(5,14-dihydro-5,8,14-trioxonaphth[2,3-c]acridan-6-yl)amino]-9,10-dihydro-9,10-dioxo-1,4,5-anthracenetriyl]tris- (8CI) (CA INDEX NAME)



IC C09B
CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)
IT 6245-09-6DP, 7H-Benzo[e]perimidin-7-one, derivs. as dyes 15956-69-1P
15956-72-6P 15956-73-7P 16058-63-2P 16058-94-9P
16058-95-0P 16555-04-7P 16555-05-8P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

******* QUERY RESULTS *******
(FORMULA 2a/3a)

```
=> d his l15

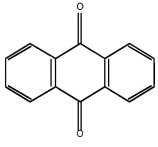
     (FILE 'HCAPLUS' ENTERED AT 08:24:13 ON 11 SEP 2009)
L15            9 S L13
                 SAVE TEMP L14 NGU057HCAP1/A
                 SAVE TEMP L15 NGU057HCAP2/A

     FILE 'STNGUIDE' ENTERED AT 08:26:41 ON 11 SEP 2009

     FILE 'HCAPLUS' ENTERED AT 08:27:24 ON 11 SEP 2009

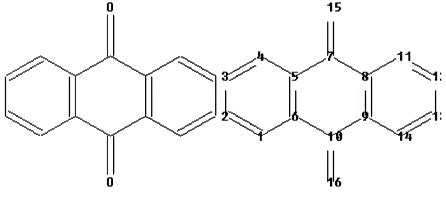
     FILE 'STNGUIDE' ENTERED AT 08:27:27 ON 11 SEP 2009

=> d que l15
L3               STR
```



Structure attributes must be viewed using STN Express query preparation:

Uploading L1.str

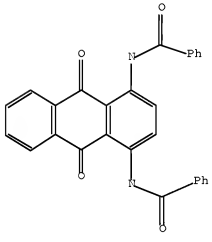



```
chain nodes :
15  16
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14
chain bonds :
7-15  10-16
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  5-7  6-10  7-8  8-9  8-11  9-10  9-14  11-12  12-13
13-14
```

exact/norm bonds :
7-15 10-16
exact bonds :
5-7 6-10 7-8 9-10
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-11 9-14 11-12 12-13 13-14
isolated ring systems :
containing 1 :

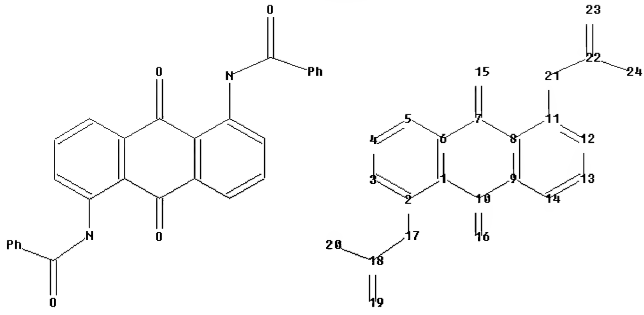
Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS

L5 72890 SEA FILE=REGISTRY SSS FUL L3
L7 STR



Structure attributes must be viewed using STN Express query preparation:

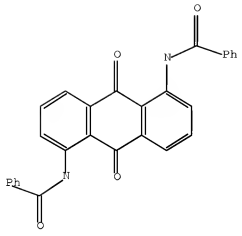
Uploading L2.str



chain nodes :
15 16 17 18 19 20 21 22 23 24
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14
chain bonds :
2-17 7-15 10-16 11-21 17-18 18-19 18-20 21-22 22-23 22-24
ring bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 6-7 7-8 8-9 8-11 9-10 9-14 11-12 12-13
13-14
exact/norm bonds :
2-17 7-15 10-16 11-21 17-18 18-19 21-22 22-23
exact bonds :
1-10 6-7 7-8 9-10 18-20 22-24
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-11 9-14 11-12 12-13 13-14
isolated ring systems :
containing 1 :

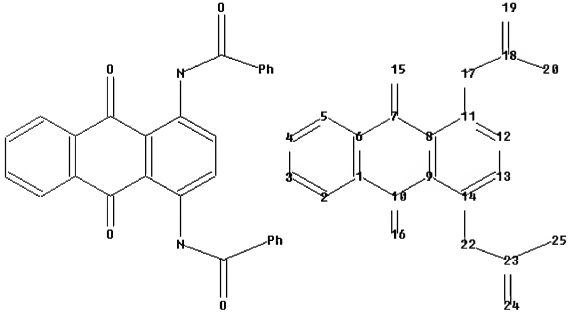
Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS 17:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS
22:CLASS 23:CLASS 24:CLASS

L11 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L3.str



chain nodes :
15 16 17 18 19 20 22 23 24 25
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14
chain bonds :
7-15 10-16 11-17 14-22 17-18 18-19 18-20 22-23 23-24 23-25
ring bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 6-7 7-8 8-9 8-11 9-10 9-14 11-12 12-13 13-14
exact/norm bonds :
7-15 10-16 11-17 14-22 17-18 18-19 22-23 23-24
exact bonds :
1-10 6-7 7-8 9-10 18-20 23-25

```
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  8-9  8-11  9-14  11-12  12-13  13-14
isolated ring systems :
containing 1 :


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS  17:CLASS  18:CLASS
19:CLASS  20:CLASS  22:CLASS
23:CLASS  24:CLASS  25:CLASS



L13           7 SEA FILE=REGISTRY SUB=L5 SSS FUL L7 AND L11
L15           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13


=> d l15 1-9 ibib abs hitstr hitind

L15  ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:         2005:1109428  HCAPLUS  Full-text
DOCUMENT NUMBER:          145:73230
TITLE:                    A second-generation liquid crystal phase-shifting
                          point-diffraction interferometer employing structured
                          substrates
AUTHOR(S):                Marshall, Kenneth L.; Adlesberger, Kathleen; Kolodzie,
                          Benjamin; Myhre, Graham; Griffin, DeVon W.
CORPORATE SOURCE:         Laboratory for Laser Energetics, University of
                          Rochester, Rochester, NY, 14623, USA
SOURCE:                   Proceedings of SPIE-The International Society for
                          Optical Engineering (2005), 5880(Optical Diagnostics),
                          58800D/1-58800D/12
                          CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER:                SPIE-The International Society for Optical Engineering
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB    By design, point-diffraction interferometers are much less sensitive to
      environmental disturbances than dual-path interferometers, but, until very
      recently, have not been capable of phase shifting.  The liquid crystal point-
      diffraction interferometer (LCPDI) utilizes a dye-doped, liquid crystal (LC)
      electro-optical device that functions as both the point-diffraction source and
      the phase-shifting element, yielding a phase-shifting diagnostic device that
      is significantly more compact and robust while using fewer optical elements
      than conventional dual-path interferometers.  These attributes make the LCPDI
      of special interest for diagnostic applications in the scientific, com.,
      military, and industrial sectors, where vibration insensitivity, power
      requirements, size, weight, and cost are critical issues.  Until very
      recently, LCPDI devices have used a plastic microsphere embedded in the LC
      fluid layer as the point-diffraction source.  The process for fabricating
      microsphere-based LCPDI devices is low-yield, labor-intensive, and very
      "hands-on"; great care and skill are required to produce devices with adequate
      interference fringe contrast for diagnostic measurements.  With the goal of
      evolving the LCPDI beyond the level of a laboratory prototype in mind, we have
      developed "second-generation" LCPDI devices in which the reference-diffracting
      elements are an integral part of the substrates by depositing a suitable
      optical material (vapor-deposited thin films or photoresist) directly onto the
      substrate surface.  These "structured" substrates eliminate many of the
      assembly difficulties and performance limitations of current LCPDI devices as
```

******* SEARCH HISTORY *******

```
=> d his nof

     (FILE 'HOME' ENTERED AT 08:15:34 ON 11 SEP 2009)

     FILE 'HCAPLUS' ENTERED AT 08:15:56 ON 11 SEP 2009
L1             1 SEA ABB=ON  PLU=ON  US20070271712/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 08:16:27 ON 11 SEP 2009
L2            26 SEA ABB=ON  PLU=ON  (10114-51-9/BI OR 2987-68-0/BI OR 4058-46-2
                 /BI OR 75311-89-6/BI OR 75312-67-3/BI OR 75312-68-4/BI OR
                 75312-69-5/BI OR 75332-93-3/BI OR 75332-94-4/BI OR 81-73-2/BI
                 OR 82-18-8/BI OR 851719-47-6/BI OR 851719-48-7/BI OR 851719-49-
                 8/BI OR 851719-50-1/BI OR 851719-51-2/BI OR 851719-52-3/BI OR
                 851719-53-4/BI OR 851719-54-5/BI OR 851719-55-6/BI OR 851719-56
                 -7/BI OR 851719-57-8/BI OR 851719-58-9/BI OR 851719-59-0/BI OR
                 851719-60-3/BI OR 851773-71-2/BI)
L3             STRUCTURE UPLOADED
               D

Uploading L1.str
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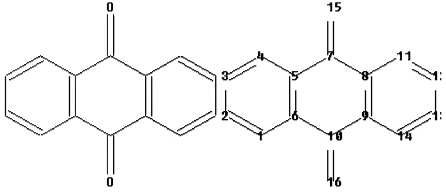
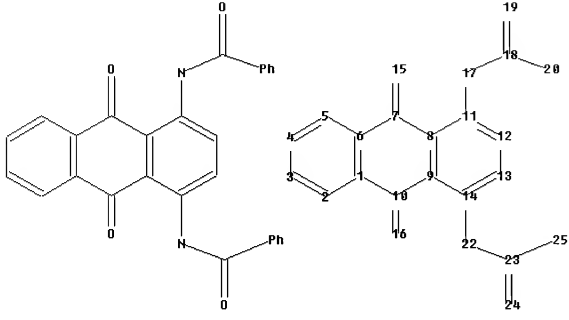



```
chain nodes :
15  16
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14
chain bonds :
7-15  10-16
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  5-7  6-10  7-8  8-9  8-11  9-10  9-14  11-12  12-13
13-14
exact/norm bonds :
7-15  10-16
exact bonds :
5-7  6-10  7-8  9-10
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  8-9  8-11  9-14  11-12  12-13  13-14
isolated ring systems :
containing 1 :


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS
```

```
L4            50 SEA SSS SAM L3
L5         72890 SEA SSS FUL L3
                 SAVE TEMP L5 NGU057REGL1/A
L6            24 SEA ABB=ON  PLU=ON  L5 AND L2
L7               STRUCTURE UPLOADED
                 D

Uploading L3.str
```

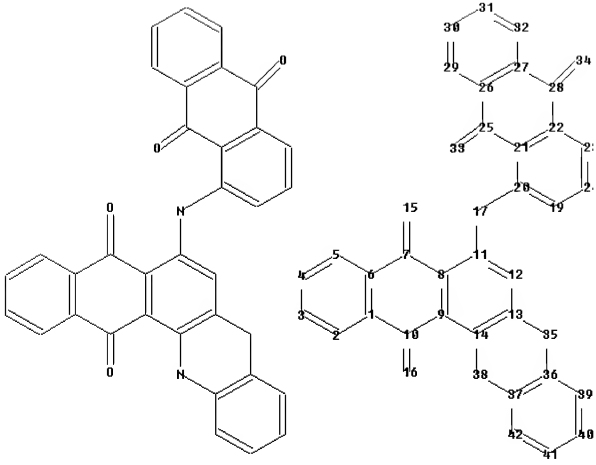



```
chain nodes :
15  16  17  18  19  20  22  23  24  25
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14
chain bonds :
7-15  10-16  11-17  14-22  17-18  18-19  18-20  22-23  23-24  23-25
ring bonds :
1-2  1-6  1-10  2-3  3-4  4-5  5-6  6-7  7-8  8-9  8-11  9-10  9-14  11-12  12-13
13-14
exact/norm bonds :
7-15  10-16  11-17  14-22  17-18  18-19  22-23  23-24
exact bonds :
1-10  6-7  7-8  9-10  18-20  23-25
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  8-9  8-11  9-14  11-12  12-13  13-14
isolated ring systems :
containing 1 :


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS  17:CLASS  18:CLASS
19:CLASS  20:CLASS  22:CLASS
23:CLASS  24:CLASS  25:CLASS
```

L8 STRUCTURE UPLOADED
D

Uploading L4.str



chain nodes :
15 16 17 33 34
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 19 20 21 22 23 24 25 26 27
28 29 30 31 32 35 36 37 38 39 40 41 42
chain bonds :
7-15 10-16 11-17 17-20 25-33 28-34
ring bonds :
1-2 1-6 1-10 2-3 3-4 4-5 5-6 6-7 7-8 8-9 8-11 9-10 9-14 11-12 12-13
13-14 13-35 14-38 19-20 19-24 20-21 21-22 21-25 22-23 22-28 23-24 25-26
26-27 26-29
27-28 27-32 29-30 30-31 31-32 35-36 36-37 36-39 37-38 37-42 39-40 40-41
41-42
exact/norm bonds :
1-10 6-7 7-8 7-15 9-10 10-16 11-17 13-35 14-38 17-20 25-33 28-34 35-36
37-38
exact bonds :
21-25 22-28 25-26 27-28
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-11 9-14 11-12 12-13 13-14 19-20 19-24

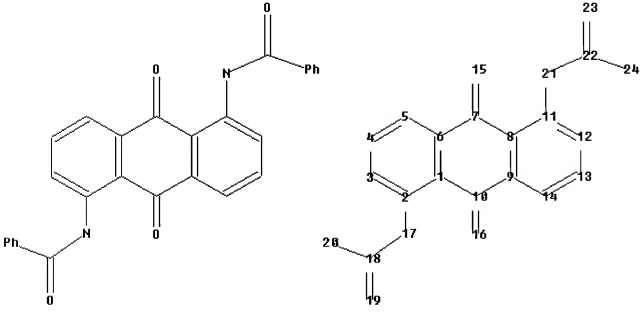
```
20-21  21-22  22-23  23-24  26-27  26-29  27-32  29-30  30-31  31-32  36-37  36-39
37-42  39-40
40-41  41-42
isolated ring systems :
containing 1 : 19 :


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS  17:CLASS  19:Atom  20:Atom
21:CLASS  22:Atom
23:Atom  24:Atom  25:Atom  26:Atom  27:Atom  28:Atom  29:Atom  30:Atom  31:Atom
32:Atom  33:CLASS
34:CLASS  35:Atom  36:Atom  37:Atom  38:Atom  39:Atom  40:Atom  41:Atom  42:Atom



L9             0 SEA SUB=L5 SSS SAM L7 AND L8
L10            1 SEA SUB=L5 SSS FUL L7 AND L8
                 D SCA
                 SAVE TEMP L10 NGU057RECOM1/A
L11              STRUCTURE UPLOADED
                 D

Uploading L2.str
```




```
chain nodes :
15  16  17  18  19  20  21  22  23  24
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14
chain bonds :
2-17  7-15  10-16  11-21  17-18  18-19  18-20  21-22  22-23  22-24
ring bonds :
1-2  1-6  1-10  2-3  3-4  4-5  5-6  6-7  7-8  8-9  8-11  9-10  9-14  11-12  12-13
13-14
exact/norm bonds :
2-17  7-15  10-16  11-21  17-18  18-19  21-22  22-23
```

```
exact bonds :
1-10  6-7  7-8  9-10  18-20  22-24
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6  8-9  8-11  9-14  11-12  12-13  13-14
isolated ring systems :
containing 1 :


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:Atom  13:Atom  14:Atom  15:CLASS  16:CLASS  17:CLASS  18:CLASS
19:CLASS  20:CLASS  21:CLASS
22:CLASS  23:CLASS  24:CLASS



L12           1 SEA SUB=L5 SSS SAM L7 AND L11
                D SCA
L13           7 SEA SUB=L5 SSS FUL L7 AND L11
                SAVE TEMP L13 NGU057RECOM2/A

     FILE 'HCAPLUS' ENTERED AT 08:24:13 ON 11 SEP 2009
L14           1 SEA ABB=ON  PLU=ON  L10
                D SCA TI
                D AU
L15           9 SEA ABB=ON  PLU=ON  L13
                SAVE TEMP L14 NGU057HCAP1/A
                SAVE TEMP L15 NGU057HCAP2/A

     FILE 'STNGUIDE' ENTERED AT 08:26:41 ON 11 SEP 2009
                D QUE L14

     FILE 'HCAPLUS' ENTERED AT 08:27:24 ON 11 SEP 2009
                D L14 IBIB ABS HITSTR HITIND

     FILE 'STNGUIDE' ENTERED AT 08:27:27 ON 11 SEP 2009
                D QUE L5
                D QUE L15

     FILE 'HCAPLUS' ENTERED AT 08:27:55 ON 11 SEP 2009
                D L15 1-9 IBIB ABS HITSTR HITIND

     FILE 'STNGUIDE' ENTERED AT 08:27:58 ON 11 SEP 2009
```